MINING AND RECLAMATION PLAN REVIEW

Sunshine Mining Company
Trixie Mine Amendment
Burgin Project
ACT/049/009

Utah County, Utah

April 16, 1984

Mining and Reclamation Plan Review

Rule M-3 (1)(a)-(h)-SCL,TNT

The applicant must submit an accurate map(s) (Scale e.g., 1:200) showing location of land affected and total number of surface acres involved; all previous areas of mining disturbance, including location of structures, spoil material, topsoil storage areas, material storage areas, and sedimentation control structures; the location and status of known testing or bore holes; and the drainage plan for the disturbed area including topographic features and drainage control structures. If additional disturbances are planned the direction, and approximate area of projected disturbance by year, should also be outlined on a map.

The specific methods of runoff containment and the direction of runoff from the minesites should be submitted in accordance with this section of the rules.

In conjunction with other information provided concerning waste rock, potential toxicity of mined products and location of water bearing strata additional material, i.e., maps, plans, cross-sections, should be provided. This information should discuss rock stratas, the relationships of ore zones, the water tables and groundwater between the Burgin and Trixie mines.

Rule M-3(2)(f)-SCL

The applicant should submit a timetable for the accomplishment of each major step in the reclamation plan for the new mine-related disturbed areas.

Rule M-5-SCL,TLP

Maps or aerial photographs (preferred) should be submitted delineating which specific buildings, roads, and mine areas acquired from HMC are being utilized by Sunshine. The bond estimate will be adjusted to include removal and/or reclamation of all areas and structures utilized for Sunshine's mining operation.

The Burgin was absolved of reclamation of roads by virtue of a letter from CCM which is now void. Shaft closure was also avoided by CCM letter. This should be adjusted for in terms of both commitment and bond.

Rule M-10-TLP

Due to the potentially high degree of mineralization associated with the waste rock and the sulfite (potential for acid production as evidenced by 4.5 pH at the Burgin site) a heightened potential for trace metal contamination of local soils and water may exist.

A study to determine the extent of any potential contamination is in order. Such a study should include determinations of:

1. The existing pH and trace metal concentrations of the waste rock
2. The acid forming potential of the waste rock
3. The ambient concentrations of trace metals in soils, waters and the plant component.
4. A leaching study to determine the expected rates of release of trace metals.
5. Sampling of runoff from the waste pile for pH and trace metals.

Rule M-10(7)-TLP

The pad associated with the Trixie facility currently impedes the natural drainage. Whatsmore, any future expansion of the waste pile will further aggrevate this situation. The operator must address means to alleviate this concern.

Rule M-10(12)-SCL

A survey of vegetation surrounding the Trixie mine must be undertaken to show that vegetation is equivalent to that at the Burgin site, if use of the same reclamation plan is to be allowed. The survey should include specific measures of ground cover by species, adequate to characterize the site. These measurements will also serve to set a revegetation success standard.

Rule M-10(14)-TLP

A map of a scale at 1:6000 or larger should be provided. It should depict the existing soil types near the waste pile versus the area in which expected future expansion of the waste pile is to occur. Further, soils data should be provided for each series. If stockpiling of soils proves necessary please provide:

1. The volume to be stockpiled
2. Map of the stockpile location
3. Methods to effect soil removal
4. Protection measures to be employed

How will topsoil in adjacent areas be protected from contamination by runoff from the waste pile should runoff prove to be a concern? (see comments under Rule M-10(6))

How will waste rock piles be reclaimed? What soils or substitute soils will be employed? A soils analysis will be required for any substitute materials.

Tom T.
File ACT/049/009
JIM
FEB 0 6 1984

SUNSHINE

February 3, 1984

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. James W. Smith, Jr.
Coordinator of Mine Land Reclamation
State of Utah, Div. of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Smith:

As you may know, Sunshine Mining Company acquired HMC Mining Company in May, 1983. HMC Mining had previously acquired the assets of Kennecott in the Tintic Mining District.

As a result of these transactions, Sunshine is now the operator of the Trixie Mine, located in Section 28, T 10 S, R 2 W, SLM, Utah County, Utah. The Trixie is approximately one-half mile from the company's Burgin project. Sunshine holds a valid Notice of Intention to Commencing Mining Operations for the Burgin project, and work there is proceeding as planned.

Attached are documents to amend Sunshine's existing Notice of Intention to Commence Mining Operations to include the newly acquired Trixie Mine property. According to our calculations, the existing reclamation bond will need to be increased by the amount of $33,700. Upon approval of the amended notice, Sunshine will provide proof of surety as required.

Sincerely,

William Anderson

William Anderson
Vice President - Mining
Sunshine Mining & Minerals

WA/f
Attachments
cc: EVH, WA, PH

RECEIVED
FEB 6 1984
DIVISION OF
OIL, GAS & MINING

Sunshine Mining Company P. O. Box 1080 208/783-1211 Kellogg, Idaho 83837

HMC MINING INC.
P.O. Box 250 • Phone 801-433-6854
EUREKA, UTAH 84628

September 15, 1983

Mr. Thomas N. Tetting
Engineering Geologist
Utah Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Tetting:

This letter is to inform you that Sunshine Mining Company has reactivated the Apex #2 Shaft near Eureka, Utah. Work on site began September 6, 1983 and shaft sinking operations should commence in early October on a single shift basis.

If you have any questions concerning the matter please feel free to contact me.

Sincerely,

Carl A. Johnson
Division Engineer

CAJ/ms

EXECUTIVE SUMMARY

* * * * * * * * * *

Sunshine Mining Company
ACT/049/009, Utah County, Utah
Sec. 22, T. 10 S., R. 2 W., SLBM

MAY 17, 1982

Commodity and Ownership

Sunshine Mining Company proposes to develop and mine the precious and base metals, silver, lead and zinc. The company acquired options on the property in June of 1980 from Chief Consolidated Mining Company by way of a mining lease. It is located on patented claims and was originally part of the East Tintic District Unit Lease held by Kennecott Copper Corporation. However, Kennecott terminated their mining lease, but retained all surface rights and Chief Consolidated Mining Company picked up the mineral leases. Sunshine has rights to the surface area necessary for their proposed mining operation. This permit concerns 2.80 acres, but options are available for expansion to 35 acres should this be necessary.

Location:

The mine is located at an elevation of 5,872 feet in the East Tintic Mountains directly southwest of Utah Lake on Section 22, Township 10 South, Range 2 West. Access is provided by the use of Silver Pass Road off of Highway 6 to an existing private service road. A gate has been installed to control access to the permit area.

Geology:

The eastern flank of the East Tintic Mountains in which the mine is situated is composed of mostly Paleozoic sediments. Thousands of feet of deposition are represented by dolomites, limestones, shales and the Tintic Quartzite. Numerous tuffs, volcanic flows, basaltic dikes, sills and intrusives mark the most recent 34 million years of activity. This was a much more geologically dramatic time and these events correlate with the implacement of mountain ranges such as the Henry's, LaSal's and the Abajo's.

Hydrology:

Surface drainage in the area is to the south by overland flow. Any runoff from the site is intercepted and contained by an old railroad right-of-way which crosses immediately to the south of the permit area. This riprapped and stable impoundment is sufficient to handle any forecast storm event.

A perched aquifer (1-3 gpm) was encountered during exploratory drilling at a 300 foot depth. This could satisfy Sunshine's development phase water requirements and has been approved by the Division of Water Rights. The possibility of encountering a hot, saline water at a depth of between 1,300 and 1,400 feet has been acknowledged. Any water encounterd during mine development will be pumped into existing underground workings and no mine water will be discharged to the surface.

Currently, culinary water is hauled and stored in a 10,000 gallon tank located on the hill above the shaft.

Soils and Climatology:

Soils in the vicinity of the mine occur between 5,500 and 6,000 feet in elevation. They were formed from lake terraces, alluvial fans and valley plains. These soils tend to be well drained with slow to moderate permeability, texture ranges from sandy clay to sandy clay loam. Sediment production is low to moderate, while salts are low and do not present a problem. Fertility is generally low with a neutral to alkaline pH. Soils are used for range, wildlife and for both dry and irrigated cropland. Average annual precipitation ranges from 8-14 inches while mean annual soil temperature is between 47°F and 59°F.

Ecology:

The primary vegetation type of the permit area is pinyon-juniper woodland, with Utah juniper (Juniperus osteosperma) and Big sage (Artemesia tridentata) predominantly. Understory vegetation provides ground cover which varies from approximately 5 percent to 20 percent. The permit area has been zoned for mining and grazing activities. The proposed reclamation plan was designed to maintain or improve the grazing potential of the permit area, where possible.

Existing Structures and Facilities:

Access to the area is provided by existing county and private roads. A new 800 foot road to the water tank and proposed substation has already been installed. An 8 by 32 foot mobile office trailer has been moved to the site and will remain through this stage of development. The dry building contains a change room, showers and toilet facilities. It is 20 by 50 feet and has already been hooked up along with the mobile trailer to a State Health approved waste-water disposal system on the existing rock pile. A new 60 by 40 foot metal hoist building has also been constructed on site near the 65 foot tall head frame, which is in place at this time. The facilities have been sized to handle a work force of 40 people which will be drawn from and housed in the surrounding towns. The site is developed on an existing waste rock pile that was produced between the 1920's and 1960's.

Mining and Reclamation Plan:

During Operations:

1. Topsoil has been stockpiled from newly disturbed areas and reseeded to prevent erosion.

2. The existing 1,100 foot deep shaft will be rehabilitated, enlarged and deepened to accommodate the new plans. Initial drift development should be completed by 1984 and will target the main Burgin ore body.

3. The existing waste rock dump will be enlarged by approximately .42 acres and stabilized while additions are made.

4. An existing high bank riprapped railroad grade will retain any surface runoff.

5. Any water encountered in the mine will be retained in old workings.

6. Access on the existing county and private roads will be maintained.

7. The site facilities for the operation include; a mobile office trailer, dry building/bathhouse, hoist building, parking area, water tank and powerline substation.

8. Soil amendment and revegetation test plots will be maintained throughout the life of project to determine the feasibility of postmining reclamation concepts.

After Operations:

1. The owner of the Burgin Mine property has demanded that upon termination of the project the access roads and working surfaces must be left open and accessible; also, that the shaft not become permanently closed.

2. All buidlings and other surface facilities not pertaining to #1 above will be removed upon termination of the operation. The water tank and substation pads will be regraded and revegetated according to an approved plan. All remaining debris will be removed from the area.

3. A steel cover will be secured over the entrance to the shaft and a six foot high chain link fence will be erected surrounding the shaft area.

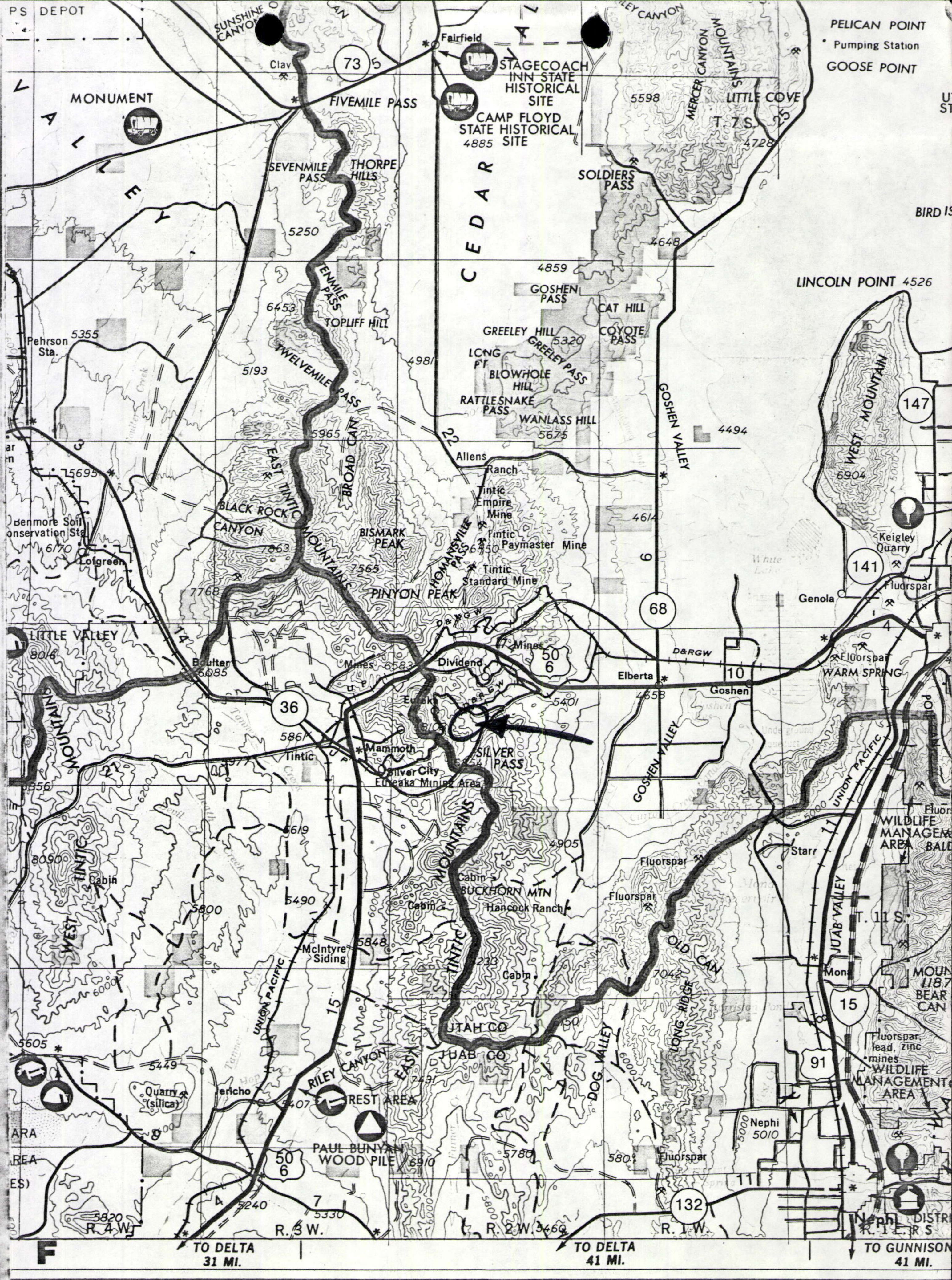
4. Stored topsoil will be reapplied to the areas it was removed from.

5. The waste rock working surface will be graded to a level configuration and the slopes will be rounded of to minimize erosion. Additional revegetation will be performed in accorance with results of the test plot studies.

6. Final abandonment approval will not be given until after a site inspection has adequately satisfied the Division.

Requested Variance to Rule M-10(12)

1. Rule M-10(12) which requires revegetation of disturbed areas has been given special consideration. Because the operational site is located on an existing waste rock site, special efforts are being made to test various treatments, i.e., soil fertilizers and conditioners and seed types in a variety of arrangements after consultation with Division staff members. If after three years of testing it is found unfeasible to establish vegetation on this previously disturbed area, then the Division will grant a variance to this portion of the rule pertaining to the waste rock pile.


PS DEPOT
SUNSHINE CANYON
Fairfield
73
STAGECOACH INN STATE HISTORICAL SITE
CAMP FLOYD STATE HISTORICAL SITE
4885
PELICAN POINT
Pumping Station
GOOSE POINT
MERCER CANYON
MOUNTAINS
LITTLE COVE
5598
T. 7 S.
4728
25
MONUMENT
VALLEY
FIVEMILE PASS
Clay
SEVENMILE PASS
THORPE HILLS
5250
CEDAR
SOLDIERS PASS
4648
BIRD IS
4859
GOSHEN PASS
CAT HILL
LINCOLN POINT 4526
GREELEY HILL
5320
GREELEY PASS
COYOTE PASS
LONG PT
BLOWHOLE HILL
RATTLESNAKE PASS
WANLASS HILL
5675
TENMILE PASS
TOPLIFF HILL
6453
TWELVEMILE PASS
5193
4981
Pehrson Sta.
5355
5965
BROAD CAN
22
GOSHEN VALLEY
4494
WEST MOUNTAIN
147
6904
Allens
Ranch
5695
Benmore Soil Conservation Sta.
EAST TINTIC MOUNTAINS
BLACK ROCK CANYON
BISMARK PEAK
7863
6170
Lofgreen
HOMANSVILLE PASS
Tintic Empire Mine
Tintic Paymaster Mine
Tintic Standard Mine
4614
6
Keigley Quarry
141
7768
7565
PINYON PEAK
68
White Lake
Genola
Fluorspar
LITTLE VALLEY
8016
14
Boulter
6085
Mines
6583
Dividend
Mines
50
6
D&RGW
Elberta
4658
10
Goshen
Fluorspar
WARM SPRING
36
Eureka
5401
5861
Mammoth
Tintic
SILVER PASS
Silver City
Eureka Mining Area
GOSHEN VALLEY
MOUNTAINS
UNION PACIFIC
WEST TINTIC
Cabin
8050
5619
5800
5490
TINTIC MOUNTAINS
4905
Cabin
BUCKHORN MTN
Hancock Ranch
Cabin
Fluorspar
Fluorspar
Starr
WILDLIFE MANAGEMENT AREA
JUAB VALLEY
T. 11 S.
McIntyre Siding
5848
15
OLD CAN
7042
LONG RIDGE
Cabin
Mona
15
UTAH CO
JUAB CO
DOG VALLEY
5605
5449
Quarry (silica)
Jericho
RILEY CANYON
REST AREA
EAST
7431
91
Fluorspar, lead, zinc mines
WILDLIFE MANAGEMENT AREA
Nephi
5010
PAUL BUNYAN WOOD PILE
6910
5780
Fluorspar
50
6
5240
5820
R. 4 W.
4
7
5330
R. 3 W.
R. 2 W.
132
R. 1 W.
11
Nephi
R. 1 E.
F
TO DELTA 31 MI.
TO DELTA 41 MI.
TO GUNNISON 41 MI.

DIVISION OF OIL, GAS, AND MINING

BOND ESTIMATE

OPERATOR: Sunshine Mining Company
MINE NAME: Burgin Project
LOCATION: East Tintic Mining District, Sec. 22, T. 10 S., R. 2 West
COUNTY: Utah County
DATE: May 17, 1982

	Operation	Amount	Rate	Cost
A.	CLEAN-UP			
	1. Removal of structures & equipment.	$24,660	Lump Sum	$24,660
	2. Removal of trash & debris.	Incl. above		
	3. Leveling of ancillary facilities pads and access roads.	Roads and pads will be left		
B.	REGRADING & RECONTOURING			
	1. Earthwork including haulage and grading of spoils, waste and overburden.	$4,080	Dozer X 2 days $90/hour 3 man crews X 2 days $25/hour	4,080
	2. Recontouring of highwalls and excavations.			
	3. Spreading of soil or surficial materials.	Incl. above		
C.	STABILIZATION			
	1. Soil preparation, scarification, fertilization, etc.	$1,588	Company estimate (see plan)	1,588
	2. Seeding or planting.			
	3. Construction of terraces, waterbars, etc.	N/A Test Plots provided		
D.	LABOR			
	1. Supervision.	Included above		
	2. Labor exclusive of bulldozer time.			
E.	SAFETY			
	1. Erection of fences, portal coverings, etc.	$240	Lump Sum for fencing	240
	2. Removal or neutralization of explosive or hazardous materials.	Shaft cover already in place		
F.	MONITORING			
	1. Continuing or periodic monitoring, sampling & testing deemed necessary.	3 annual visits	$100/year	300
G.	OTHER			
	Reseeding, if necessary	$1,588		1,588
			SUBTOTAL	$32,456
	13% inflation factor for 6 year life of operation			$67,572